

**CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
STATEMENT OF INVESTMENT POLICY**

**FOR THE
INFLATION-LINKED ASSET CLASS**

December 14, 2007

This Policy is effective upon adoption and supersedes all previous all previous policies on inflation-linked assets, commodities, inflation-linked bonds, infrastructure, and forestland (timber).

I. PURPOSE

The CalPERS Total Fund Statement of Investment Policy, adopted by the CalPERS Investment Committee ("Committee"), sets forth CalPERS' overarching investment purposes and objectives with respect to all its investment programs.

This document sets forth the investment policy ("Policy") for the Inflation Linked Asset Class ("IL Asset Class" or "Program"). The design of this Policy ensures that investors, managers, consultants, and other participants selected by the California Public Employees' Retirement System ("CalPERS") take prudent and careful action while managing the Program. Additionally, use of this Policy assures sufficient flexibility in managing investment risks and returns associated with this Program.

The Program includes four components: commodities, inflation-linked bonds, infrastructure, and forestland. The Policy includes investment guidelines for the Program structure followed by an attachment for each component.

II. STRATEGIC OBJECTIVE

The Program shall be managed to accomplish the following:

- A. Prudently achieve long-term returns above inflation;
- B. Diversify CalPERS investments; and
- C. Hedge against inflation risks.

III. RESPONSIBILITIES

- A. CalPERS' Investment Staff ("Staff") is responsible for the following:

1. All aspects of portfolio management including monitoring, analyzing, and evaluating performance relative to the appropriate benchmark.
2. Reporting to the Committee quarterly or more frequently if needed about the performance of the Program.
3. Monitoring the implementation of, and compliance with, the Policy. Staff shall report material concerns and all Policy violations in a timely manner and in writing to the Committee. These reports shall include explanations of the violations and appropriate recommendations for corrective action.

The Asset Allocation unit will be responsible for the Program, though it may delegate investment management of Program assets to either external managers or other internal units.

- B. The General Consultant ("Consultant") is responsible for:

Monitoring, evaluating, and reporting periodically to the Committee, on the performance of the Program relative to the benchmark and Policy.

- C. For those programs that are managed by an External Manager ("Manager"), the Manager is responsible for all aspects of portfolio management as set forth in each Manager's contract with CalPERS and shall, at a minimum, fulfill the following duties:

1. Communicate with Staff as needed regarding investment strategy and investment results.
2. Monitor, analyze, and evaluate performance relative to the agreed upon benchmark.
3. Cooperate fully with CalPERS' Staff, Custodian, and Consultant assigned to the Program concerning requests for information.

IV. PERFORMANCE OBJECTIVE AND BENCHMARK

- A. Benchmarks for the Program and for each of the four components are listed in Table 1 below:

Table 1. Program Benchmarks

<u>Component</u>	<u>Benchmark Index</u>
Commodities	GSCI-TR
Inflation-linked bonds	ILB Custom Index
Infrastructure	CPI + 5%
Forestland	CPI + 5%
Program (IL Asset Class)	CPI + 4%

GSCI-TR = S&P GSCI Total Return Index.

ILB Custom Index = 67% Lehman Total U.S. TIPS Index + 33% Custom Lehman Global Inflation Linked Bond Index exTIPS, unhedged.

CPI = Prior month trailing 12-month U.S. Consumer Price Index, all urban consumers, not seasonally adjusted.

- B. The performance objective is to outperform the Program benchmark, net of all fees, over rolling five-year periods.

V. INVESTMENT APPROACHES AND PARAMETERS

A. IL Asset Class Program Allocations

Program allocation targets and ranges are listed in Table 2 below. Allocations are expressed as a percentage of the market value of the CalPERS fund.

Table 2: Program Allocations

<u>Component</u>	<u>Target*</u>	<u>Range*</u>
Commodities	1.5%	0.50% - 3.00%
Inflation-linked bonds	1.0%	0.50% - 3.00%
Infrastructure	1.5%	0.00% – 3.00%
Forestland	<u>1.0%</u>	<u>0.00% – 2.00%</u>
IL Asset Class	5.0%	2.00% - 7.00%

* percentage of the CalPERS Fund.

The allocation ranges in Table 2 will apply when the market value of Program assets equals or exceeds two percent of the CalPERS fund.

B. Prohibited Investments

Ineligible investments include the following:

1. Tobacco companies; and
2. Any investment prohibited by CalPERS' Insider Trading Policy or Restricted Company list.

VI. CALCULATIONS AND COMPUTATIONS

Investors, managers, consultants, and other participants selected by CalPERS shall make all calculations and computations on a market value basis as recorded by CalPERS' Custodian.

VII. GLOSSARY OF TERMS

Key words used in this policy are defined in CalPERS' Master Glossary of Terms.

Approved by the Policy Subcommittee: December 14, 2007

**CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
STATEMENT OF INVESTMENT POLICY**

**FOR THE
COMMODITIES PROGRAM**

December 18, 2006-December 14, 2007

~~This policy is effective immediately upon adoption and supersedes all previous policies pertaining to the use of commodities within the Program.~~

I. PURPOSE

This ~~attachment~~document ~~to the Inflation-Linked Asset Class Policy~~ sets forth the investment policy (~~"the Commodities Policy"~~) for the ~~CalPERS Commodities Program~~ (~~"the Program"~~)CalPERS commodities investments (~~"Commodities Program"~~). The Commodities Program includes overlay exposures and collateral investments.

~~The design of this Policy ensures that commodities exposure of the California Public Employees' Retirement System ("the System") is managed with prudence and care. Additionally, use of this policy provides assurance that there is sufficient flexibility in controlling investment risks and returns associated with the use of derivative instruments.~~

~~The program has two component parts:~~

~~1.Managed allocation to commodities.~~

~~2.Commodity hedging — execution of hedging for asset classes to offset commodity risk to the System's portfolio.~~

~~The policy has been broken into a general program overview which explains and sets forth the common elements of the program and two attachments which reflect parameters of the two component parts of the program.~~

~~Attachment 1 details the managed allocation to commodities. Attachment 2 details commodity hedging as a means to offset commodity risk to the System's portfolio.~~

II. STRATEGIC OBJECTIVE

~~The primary objectives of the Program are:~~ The Program shall be managed to accomplish the following:

~~A. Diversify the System's Investment Program~~

~~B. Enhances the System's total return; and to~~

~~A. Execute bonafide hedges to offset commodity risk for all assets within the System.~~

A. Enhance CalPERS' risk-adjusted returns;

B. Diversify CalPERS investments; and

C. Hedge against inflation risks; and

~~D. Consider solely the interest of CalPERS' participants and their beneficiaries in accordance with California State Law.~~

III. RESPONSIBILITIES AND DELEGATIONS

Responsibilities are described in the Inflation-Linked Asset Class policy, Section III.

~~A. The **System's Investment Committee** ("Investment Committee") is responsible for approving and amending the Policy and delegates responsibility for administering the Program to the System's Investment Staff through the Delegation of Authority (Delegation Nos. 89-13 and 06-03-INV).~~

~~A. The **System's Investment Staff's** ("the Staff") duties include, but are not limited to, the following:~~

~~1. Reporting to the Investment Committee annually about the performance and compliance of the Program;~~

~~2. Maintaining a procedures manual which is subject to periodic review and updating that outlines staff's operational procedures used in implementing this policy; and to~~

~~Reporting immediately all violations of the Policy to the Chief Investment Officer (CIO) and quarterly to the Investment Committee with explanations and a plan of action to prudently remedy any violations.~~

~~The General Pension Consultant ("the **General Pension Consultant**") shall monitor performance and report to the Investment Committee on a quarterly basis, in accordance with their contract. is responsible for:~~

C. ~~The Commodities Consultant~~ is responsible for monitoring and evaluating the Program and reporting to the Investment Committee at least annually.

D. _____

IV. PERFORMANCE OBJECTIVE AND BENCHMARK

A. The Commodities Program benchmark is the S&P GSCI Total Return Index ("S&P GSCI TR Index").

B. The performance objective is to outperform the benchmark, net of all fees.

V. INVESTMENT APPROACHES AND PARAMETERS

A. Permitted Investment Instruments

The following classes of investments Commodities Program overlay instruments are permitted ~~instruments within the Program:~~

1. Futures contracts: ~~Commodity futures contracts which are Commodities and Futures Trading Commission (CFTC) approved are permitted;~~
2. Forward contracts:
3. Swaps: ~~Swaps which provide for the receipt of the rate of return of the permitted cash market, futures market, commodity index or sub-index instruments are permitted;~~
4. Structured notes; and ~~Structured notes linked to the return of single commodities or baskets and hybrid structures with other assets are permitted~~
5. Options ~~options on commodity futures or baskets of commodity futures are permitted.~~

Individual positions may be long or short the commodity risk exposure.

Direct investments in physical commodities are not permitted.

Derivative Instruments may be standardized and exchange traded (e.g., futures), or privately negotiated and over-the-counter (OTC), e.g., swaps.

B. Instrument Risk Exposure

The risk exposure of the investment instruments may be long or short, or a combination of both.

The underlying risk exposure may be to a cash commodity or a commodity derivative.

Instruments incorporating multiple commodity risk exposures, such as commodity baskets and commodity indices, are allowed.

The risk exposure for exchange traded instruments is with the exchange's clearinghouse, and with the approved counterparty for OTC transactions.

V.C. Listing Requirements

~~Derivatives, which are futures contracts, shall be CFTC approved and exchange-traded. Options may either be exchange-traded or traded over the counter (OTC). If traded over the counter, staff shall adhere to counter-party guidelines.~~ Exchange traded commodity futures, options and any related instruments may be traded on any exchange regulated by the CFTC (Commodities Futures Trading Commission) or the FSA (Financial Services Authority) of the United Kingdom, or on any exchange that lists a commodity future included in the Commodities Program benchmark.

D. Counterparty Requirements

1. Counterparty creditworthiness, for non-exchange traded derivatives, shall be at a minimum of "A3" as defined by Moody's Investor Service, "A-" by Standard & Poor's and "A-" by Fitch. The use of counterparties holding a split rating with one of the ratings below A3/A- is prohibited. The use of unrated counterparties is prohibited unless the counterparty is a wholly owned affiliate of a parent company that unconditionally guarantees payment and meets the above credit standards.
2. Individual counterparty exposure, for non-exchange traded commodity derivatives, is limited to the ~~5040%~~ 5040% of the net notional amount of the System commodity derivative exposure option-adjusted exposure of the Commodities Program at the inception of a new position. An exception is allowed if the total non-exchange traded commodity derivatives exposure is less than ~~\$350 million~~ \$1 billion.
3. Swaps shall be settled monthly.

4. Any entity acting as counterparty shall be regulated in either the United States or the United Kingdom.

E. Other Risk Management

1. Liquidity risk shall be managed by adhering to the above counterparty requirements.
2. Legal risk will be minimized by engaging in over-the-counter (OTC) derivative transactions only where such transactions are enforceable under the laws of the governing jurisdiction and will be governed by an International Swaps and Derivatives Association, Inc. (ISDA) agreement where applicable.
3. Pricing risk will be minimized by using standardized or market accepted instruments for OTC derivatives. Exchange-traded derivatives will be used when appropriate to minimize pricing risk.
4. Sector risk will be mitigated by maintaining net option-adjusted commodities exposures within plus and minus twenty percentage points of benchmark weights for the following commodity overlay sectors: energy, metals, and "soft" commodities (currently food and other agricultural products). The benchmark commodity index provider will be the source in determining the sector of individual commodities.

F. Commodity Collateral

1. Collateral Market Value

The market value of the commodities collateral shall be maintained at 100% or greater of the net option-adjusted notional value of the commodities overlay exposure at the time of any new commodities overlay position. The intent of this constraint is to avoid incurring economic leverage (commodities value exceeding the value of the collateral) due to investing in commodities, while recognizing that the amount of collateral relative to the amount of commodities exposure may drift from time to time due to a variety of possible factors, which may cause the collateral value to drop below the value of commodities. If the collateral market value falls below the net option adjusted value of the overlay, portfolio adjustments will be made at the earliest opportunity to bring the collateral value up to the notional value of the overlay.

2. Permitted Investments

The following classes of Commodities Program collateral investments are permitted.

- a. Units of an internal short term investment fund ("STIF");
- b. Inflation linked bond investments held in the IL Asset Class;
- c. Cash or treasury debt obligations used for futures margin requirements; and
- d. Any receivable due from an approved counterparty to a commodity-related investment.

Approved by the Policy Subcommittee: December 15, 2006

Adopted by the Investment Committee: December 18, 2006

Revised by the Policy Subcommittee: December 14, 2007

Attachment 1

MANAGED ALLOCATION TO COMMODITIES**I. BENCHMARK**

The benchmark for the managed allocation shall be a combination of 90% (Goldman Sachs Commodity Index - Excess Return ("GSCI-ER") minus cost of swap fees (25 basis points)) + 100% (three month Treasury Bill returns rebalanced quarterly). The index combines the GSCI-ER index which is a world production weighted commodity index with the returns of three month Treasury Bills that will be utilized to measure a fully collateralized index.

II. PROGRAM PARAMETERS / RISKS

A. **Leverage** Investments in commodities derivatives shall be fully collateralized initially and rebalanced on a quarterly basis.

B. **Collateral risk** will be managed according to and in compliance with the Dollar-Denominated Fixed Income Limited Duration Policy.

C. **Liquidity risk** shall be managed in a disciplined manner by maintaining numerous relationships with diverse counterparties.

D. **Legal risk** will be minimized by not engaging in derivative transactions where such transactions are unenforceable under the laws of the governing jurisdiction and will be governed by an International Swaps Derivatives Association (ISDA) agreement where applicable.

E. **Pricing risk** will be minimized by using standardized or market accepted instruments for over-the-counter (OTC) derivatives. Exchange-traded derivatives will be used when appropriate to minimize pricing risk in general.

F. **Sector Risk** will be managed by looking at various secular and cyclical factors to determine the appropriate risk exposure relative to the index.

Sector Ranges: The following are ranges by which actual allocations can fluctuate from the benchmark sector weightings:—

Sector	Benchmark Commodity Weight*	Sector Range
Energy	68.8%	40-100%
Metals	14.1	0-40
Food	17.1	0-40
GSCI Index Total	100.00%	

~~* Benchmark commodity weights as of October 31, 2006. Commodities weightings within the GSCI represent World Production Weights which are calculated each year based on a 5 year rolling average versus Percentage Dollar Weights which fluctuate dynamically as prices change throughout the day.~~

Attachment 2

COMMODITY HEDGING**~~I. BENCHMARK~~**

~~The benchmark is not applicable for the measurement of System hedging.~~

~~II. PROGRAM PARAMETERS / RISKS~~

~~A. **System Hedging**—The program will facilitate the execution of commodity transactions for hedging purposes of the System. Hedging activity in other asset classes shall be determined by the respective SIO, and implemented by the commodities team.~~

~~1. **Hedge ratio**—the appropriate size of the hedge will be determined in coordination with the SIO of the asset class seeking the hedge and commodities team.~~

~~2. **Hedge Vehicle**—the hedge vehicle or the underlying hedging instrument will be determined by the commodities team in coordination with the SIO of the asset class seeking the hedge.~~

~~3. **Leverage**—not applicable~~

~~4. **Hedge rebalancing**—will be determined by the commodities team in coordination with the SIO of the asset class seeking the hedge but reviewed at least annually.~~

~~B. **Liquidity risk** is the ease with which a specific amount can be sold at or near market prices. Liquidity risk shall be managed in a disciplined manner by maintaining numerous relationships with diverse counterparties.~~

~~C. **Legal risk** will be minimized by not engaging in derivative transactions were such transactions are unenforceable under the laws of the governing jurisdiction and will be governed by an International Swaps Derivatives Association agreement where applicable.~~

~~D. **Pricing risk** will be minimized by using standardized or market accepted instruments for over-the-counter (OTC) derivatives. Exchange-traded derivatives will be used when appropriate to minimize pricing risk in general.~~

INFLATION-LINKED BOND PROGRAM

December 14, 2007

I. PURPOSE

This attachment to the Inflation-Linked Asset Class Policy sets forth the investment policy ("Policy") for Inflation-Linked Bond investments (ILB Program).

II. STRATEGIC OBJECTIVE

The Program shall be managed to accomplish the following:

- A. Enhance CalPERS' risk adjusted returns;
- B. Diversify CalPERS investments; and,
- C. Hedge against inflation risks.

III. RESPONSIBILITIES

Responsibilities are described in the Inflation-Linked Asset Class policy, section III.

IV. PERFORMANCE OBJECTIVE AND BENCHMARK

- A. The ILB Program benchmark is a blend of 67% Lehman Treasury Inflation-Protected Index (TIPS) and 33% Lehman Custom International Inflation-Linked Bond Index ex TIPS, unhedged.
- B. The performance objective is to outperform the benchmark, net of all fees.

V. INVESTMENT APPROACHES AND PARAMETERS

A. Permitted Investments and Ranges

ILB Program targets and permissible ranges as a percentage of total portfolio are listed below:

Sector	Policy target	Permitted range
Total investment grade inflation-linked government bonds	100%	80-100%
U.S. inflation linked bonds	67%	47-87%
Investment grade international inflation-linked bonds	33%	13-53%
Non-government investment grade inflation-linked bonds	0%	0-15%
Investment grade nominal government bonds	0%	0-15%
Short-term fixed income	0%	0-10%
Non-investment grade inflation-linked government bonds	0%	0-5%

Derivatives with risk and return characteristics substantially similar to bonds or bond indices included in the Program benchmark are permitted. Any use of derivatives shall be in compliance with the CalPERS Derivatives Investment Policy as stated in Section IX of the CalPERS Dollar-Denominated Fixed Income Program Policy.

B. Interest Rate Risk

Interest Rate Risk is the price volatility produced by changes in the overall level of interest rates as measured by option-adjusted duration. Duration shall be maintained at \pm one year of the benchmark duration.

C. Sovereign Ranges

The non-U.S. segment of the ILB benchmark is a custom benchmark of ILBs issued by selected countries in the Lehman Global Inflation Linked Index based on size and liquidity criteria. The selected countries and weights as of September 30, 2007 are listed in the table below and may be revised based upon periodic review.

Issuer	Benchmark Issuer Weight*	Range
United Kingdom	15%	5-25%
France	10%	0-20%
Italy	5%	0-15%
Japan	3%	0-13%
Germany	1%	0-11%

* Benchmark issuer weights as of September 2007. Total may not sum to 100% due to rounding.

The minimum portfolio allocation to each non-U.S. country shall be the greater of either zero or ten percentage points less than the benchmark weight. The maximum ILB investment by country shall be ten percentage points greater than the benchmark weight. The resulting permissible allocation ranges by country as of September 30, 2007 are listed in the right column of the above table.

D. Currency Risk

Currency Risk is the risk of having different weights in currency than the index. The permissible currency ranges shall be consistent with the sovereign ranges (Section V.C.) of $\pm 10\%$ of the benchmark weights. The table below lists the currency ranges as of September 30, 2007. Note, since Italy, France and Germany use the Euro as a currency, the upper end ranges for each country have been combined to equal 45% top end range for Euro exposure (France, Italy and Germany's top range is 20%, 15% and 11% respectively).

Currency Allowable Ranges

Currency	Benchmark Weight*	Range
Euro	15%	0-46%
UK Sterling	15%	5-25%
Japanese Yen	3%	0-13%

*Benchmark weights are as of September 2007.

E. Restrictions and Prohibitions

1. Except for government issuers, investments in a single issuer shall not exceed 2% of the Inflation-Linked Bond Portfolio during the holding period for such investment. For High Quality LIBOR and STIF, no single issuer limit exists.
2. Non-investment grade securities are not to exceed 5% of the total portfolio.
3. Portfolio leverage is not permitted at any time.
4. Sections V.A and V.C of this attachment specify sector and issuer ranges.
5. All non-US securities must be compliant with the Foreign Debt Policy which specifies minimum credit ratings. The Foreign Debt Policy is included as Attachment B1

Approved by the Policy Subcommittee: December 14, 2007

Attachment B1**Local-Currency Debt of National Governments and All Debt of Corporations and Subnational Governments (i.e. Provincial, State and Municipal)**

1. Both the issuer and issuer's national government (if the issuer is not the national government itself) must be rated investment grade, at least BBB- by S&P or Fitch, or Baa3 by Moody's. Even in the case of local-currency debt, this requirement must be satisfied by long-term foreign currency ratings instead of local-currency ratings, which are generally higher because a country can easily print more of its own currency to meet its local debt obligations. This unconventional, very conservative application of the rating requirement will give extra protection against the special foreign-exchange valuation and retrieval risks of local currency.
2. The country must be part of the Lehman Global Aggregate Index, a widely followed index which includes only those local markets that are fairly liquid and fairly well developed.
3. The country's currency must be fully convertible in the spot market for foreign investors, so that Managers may retrieve CalPERS' funds without limit or obstruction.

Global Debt Issued by National Governments

The policy stipulation for global debt issued in major markets differ somewhat for holdings denominated in major non-dollar currencies and for holdings denominated in the dollar. The difference is found on the approach to limiting portfolio concentration in emerging markets, while minimum credit rating requirements are the same for both. The stipulation is as follows:

For externally managed portfolios, global bonds issued by national governments must have a credit rating of BB- or higher from S&P or Fitch and Ba3 or higher from Moody's.

INFRASTRUCTURE PROGRAM

When approved by the Investment Committee, the Infrastructure Policy will be incorporated as Inflation-Linked Asset Class Policy – Attachment C

**CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
STATEMENT OF INVESTMENT POLICY**

**FOR
Timber Real Estate FORESTLAND PROGRAM**

September 10, 2004 December 14, 2007

I. PURPOSE

This attachment document to the Inflation-Linked Asset Class Policy sets forth the investment policy ("the Policy") for the Timber Investment Real Estate Forestland Program Portfolio ("the Portfolio Program"). The design of this Policy ensures that investors, managers, consultants, or other participants selected by the California Public Employees' Retirement System ("the System") take prudent and careful action while managing the Portfolio. Additionally, use of this Policy provides assurance that there is sufficient flexibility in controlling investment risks and returns associated with the Forestland Assets Portfolio.

II. STRATEGIC OBJECTIVE

Achieving the highest total rate of return possible, consistent with a prudent level of risk, the liabilities of the System, and the investment guidelines contained herein is the strategic objective of this Portfolio. The System's timber investment shall be considered a component of the specialized equity real estate portfolio. As such, the Portfolio shall achieve an appropriate risk adjusted return.

II.

The Forestland Program Portfolio shall be managed to accomplish the following:

- A. Preserve investment capital;
- B. Generate attractive risk-adjusted rates of return for the System CalPERS as a total return investor, including the following components:
 - 1. Provide, at a minimum, moderate to low cash flow from operations with the generation of cash flow secondary to producing long term total returns ; and
 - 2. Provide appreciation potential as a result of biological growth and employing active best management techniques and

practices. Including, but not limited to silvicultural best practices.

C. Provide a hedge against inflation.

~~D. Consider solely the interest of the System's participants and beneficiaries in accordance with California State Law.~~

III. RESPONSIBILITIES

Responsibilities are described in the Inflation-Linked Asset Class policy, section III.

IV. PERFORMANCE OBJECTIVES

The Portfolio shall be managed to achieve the following long-term objectives, net of fees.

~~A. Exceeding, on a before fee basis, the National Council of Real Estate Investment Fiduciaries Timber Index ("NCREIF Timber Index") while maintaining an appropriate level of risk.~~

A. Exceeding a minimum target real rate of return of 5% after fees 6% (after fees) (inflation plus a premium of 5%, inflation measured by the United States Bureau of Labor Statistics Consumer Price Index for All Urban Consumers -CPI-U).

B. Achieving real rates of return from individual assets held in the Portfolio that exceed a target rate that is adjusted for risk depending on the nature of the investment and the country and region in which it is located with the overall target stated in paragraph A above as the benchmark.

V. INVESTMENT APPROACHES AND PARAMETERS

~~A. Environmental~~Sustainability Considerations

~~Maximizing the economic benefits to the System CalPERS is the primary objective of the timber investment program Portfolio. The management of each investment shall incorporate sound principles for environmental management and social responsibility principles with full consideration of impacts on wildlife biodiversity, water and air quality, recreation, and soil conservation and local communities especially indigenous groups. Respecting the desire to maintain and enhance environmental quality and the social and economic benefits accruing to local communities, the System CalPERS shall strive to use the best and highest forest~~

management standards commercially and economically feasible while meeting or exceeding the performance objective. To this end, investment opportunities involving forests that have achieved independent environmental or forest certification will be sought. For assets not yet certified to such a standard, proponents and managers of the properties will be encouraged to seek certification and commit to a fixed time table for its realization. In such cases, due diligence procedures will include benchmarking management practices against an international or national standard for forest management appropriate for the region in which the asset is located.

B. Non-conventional Forestland Investments

Investments in emerging product markets for forestlands involving non-traditional sources of revenue such as carbon sequestration and the production of feed stock for bio-fuels from both woody (e.g. traditional timber species, bamboo) and non-woody (e.g. switchgrass) vegetation are permitted. These investments will be subjected to the same performance requirements as traditional forestland investments and will be scrutinized rigorously prior to committing funds and monitored closely to ensure acceptable performance.

BC. Investment Objectives and Criteria

1. Investment quality

a. TimberlandForestland tracts shall be comparable in quality to those held by other institutional investors or the forest products industry to enhance an exit strategy. The following parameters shall be used as a guide when relevant to assess comparability to investment grade forestland assets for possible inclusion in the Portfolio:

1. **Soils** – soil structure and fertility should be as good or better on average than comparable industrial tracts.

2. **Rainfall** – the annual average and distribution of rainfall should be similar to that for observed on nearby industrial tracts.

3. **Stocking** – the forest should be fully stocked with vigorous healthy trees and species that

are matched to the sites with no backlog of unplanted land.

4. **Genetic stock** – for plantations, the provenance of the planted trees should be appropriate for the sites and have shown good growth and form characteristics.
5. **Silvicultural practices** – the silvicultural prescriptions applied by the current owner and proposed by the candidate investment manager/property manager should be proven as appropriate for the species, sites, and target markets. There should be verifiable evidence that the prescriptions have been implemented as planned.
6. **Fire threat/protection** – the threat of fire should be low and proven protection capacity should exist for the asset and neighboring lands.
7. **Biotic risks** – there should be little or no evidence or history of problems with insect, or fungal, pathogens or harmful animals.
8. **Abiotic risks** – there should be little or no evidence or history of problems from wind throw, flooding, snow press, and other abiotic risks.
9. **Diverse competitive markets** – the forest should be located in proximity (economically viable) to diverse and competitive markets for the full range of products expected to be generated by the forest.
10. **Well developed transportation network** – the private and public transportation network (roads, rail, and waterways) should be well developed and well maintained as warranted.
11. **Labor** – there should be no evidence of labor shortages or labor disruptions for

manufacturing phases relevant to the investment.

12. **Tenure** – the property should have secure, defensible legal title with no evidence of outstanding land claims, whether the intention is to buy the land or use some other form of contractual arrangement (lease, joint venture, and license).

13. **Liabilities** – there should be no outstanding material regulatory (environmental, silvicultural, protected areas, taxation, other) liabilities associated with the property.

~~b. Tracts shall be located within strong market areas defined as having multiple wood using facilities of various types (e.g., sawmills, pulp mills, and collection yards), preferable within 75 miles.~~

~~c. Equity ownership of timber real estate shall be acquired, which includes underlying land, water and mineral rights if available and economically feasible.~~

2. Diversification

The Portfolio shall be appropriately diversified to reduce risk. ~~Furthermore, t~~The Portfolio shall be managed to maintain a degree of diversification with regard to geography, forest cover and revenue sources including emerging product markets and timber species, both age and product type.

a. Diversification by Geography

The Portfolio shall include investments in a variety of jurisdictions. Investments in both domestic and international markets are permitted with the relative proportion of each type at a given time to be determined based on prevailing market conditions. Regional diversification within a particular country shall also be considered when such diversification contributes measurably to risk mitigation.

~~Allocation ranges have been established for each of the recommended geographic regions, as well as a domestic and international component. Market~~

~~opportunities and conditions, rather than absolute and precise diversification targets, shall be the overriding factors in assembling the timberland portfolio.~~

Region	Allocation Range
Domestic	90-100%
South	40- 70%
Northwest	20- 50%
Northeast	0- 5%
International	0- 10%

~~The System may consider investing in international timber with full analysis of tax consequences among other factors. See Statement of Objectives and Policy for International Equity Real Estate (Section IV.A.1.). General U.S. environmental principles and land management best practices shall be considered prior to any international timber investment and in the property management and operation of an investment.~~

b. Diversification by species, age, and product type
Forest Cover

The Portfolio shall include assets that are diversified with respect to forest cover including a variety of species in both the softwood and hardwood species groups. Diversification can also be enhanced by investments in non-traditional woody and non-woody species. Diversification by forest cover shall be consistent with the Portfolio requirements for financial performance and risk mitigation. Shall be diversified so no one specie or product (pulpwood, sawtimber, or specialty hardwood) shall dominate the portfolio.

~~The portfolio shall be managed to maintain a degree of diversification in order to minimize market risk; that is, price dependence with a certain harvest period.~~

c. Diversification by Revenue Source

The Portfolio shall be diversified so that no one source of revenue (bio-fuel, carbon sequestration, pulpwood, sawtimber, specialty hardwood, non-timber) dominates the Portfolio.

The Asset Allocation Unit will review the investments in forestland assets regularly and order adjustments when necessary to ensure satisfactory diversification by geography, forest cover and revenue sources. Adjustments to diversification in the Portfolio shall be implemented on an opportunistic basis over a reasonable time frame (normally within a three-year period), and with ample consideration given to preserving the investment returns to CalPERS.

3. Investment Asset Size

Individual tract investments in the Portfolio shall have a range of sizes preferred size range of \$2-50 million in order to both enhance liquidity of the Portfolio and enable participation in larger opportunities while maintaining significant control over management. An individual investment tract shall be one or more parcels of timber forestland with unity of title, use, and contiguity. Non-contiguous parcels of land may be considered an individual investment tract if there is unity of operation.

4. Investment Holding Period/Dispositions

The target holding period for timberland/forestland assets shall generally be for long-term investment (10 years or more). However, disposition of individual tracts investments may be triggered by an opportunity to capture a return in excess of the targeted return, or by a revised investment strategy resulting from changes in timber markets for forest products or changes in the System's CalPERS' financial objectives.

5. Leverage

Subject to qualifications state in the Equity Real Estate Leverage Policy, the Timber Real Estate Investment Portfolio shall be permitted to leverage the Portfolio up to a maximum of 40% subject to approval by the SIO Real Estate or the Chief Investment Officer. The upper bound loan-to-value of the Forestland Program shall be 50% with CIO approval and otherwise 40%. If Program leverage exceeds the upper bound, it shall be returned to below the upper bound within three years with CIO approval and otherwise within one year. In any use of leverage, the debt service payments should not drive harvesting activities.

6. Investment Manager and Property Management

- a. The investment manager shall be responsible for developing operating management plans, strategic plans and budgets, and on-site supervision of each timberland forestland holding. Individual assets Tracts must be physically inspected at least once a year. Emphasis shall be placed on active management to capitalize on opportunities that add value.
- b. On-site property management shall be conducted, under the supervision of the investment manager, by firms with an established presence in the local timberland forestland markets and demonstrated expertise in optimizing timber forestland property performance.

~~c. Each holdings shall be managed to maximize its timber producing capabilities.~~

~~(1) Open areas shall be planted as soon as possible.~~

~~(2) Roads and boundary lines shall be inspected and maintained regularly.~~

~~(3) Hunting rights and other sources of lease income shall be obtained where possible.~~

dc. Management shall comply with all laws and regulations appropriate applicable to the jurisdictions where the forestland assets are located. ~~Federal, state and local regulations.~~

ed. Where prudent and economically practical, revenue sources from non-timber resources such as hunting, fishing, gathering, and recreation shall be permitted. A full investigation of the legal liabilities associated with both destructive and non-destructive use of non-timber forest resources, whether for fees or not, shall be completed prior to permitting such use. ~~recreational use of properties shall be permitted, with consideration for minimizing legal liability risks.~~

- f. ~~The generation of cash flow shall be secondary to producing long-term total returns.~~

7. Contractual Arrangements

Equity ownership of forestland assets is the preferred method of investment. However, other contractual arrangements such as long-term lease, joint venture, and forest licenses are permitted. All types of contractual arrangements shall include exclusive ownership or use rights for the land, timber and non-timber resources, water, sequestered carbon, and minerals whenever possible.

8. Prohibited Investments

The purchase of land for the primary purpose of commercial land development and speculation shall be prohibited. Investments that involve forced labor, the illegal or harmful use of child labor, violation of community or indigenous peoples' legal or usufruct rights, or violation of laws or regulations pertaining to threatened or endangered species are prohibited.

D. Asset Allocation

The asset allocation range for the Forestland Asset Portfolio is given in the CalPERS Statement of Investment Policy for Equity Real Estate. Upon adoption of a Statement of Investment Policy for the Inflation-linked Asset Class, asset allocation for the Forestland Asset Portfolio will be governed by the Inflation-linked Asset Class policy.

From time to time, the actual allocation may fall out of the ranges prescribed by the Policy. In these instances, adjustments to correct the actual percentage in order for it to comply with the Policy allocation range shall be implemented on an opportunistic basis over a reasonable time frame (within a three-year period with CIO approval and otherwise within one year), and with full consideration given to preserving the investment returns to CalPERS.

E. Risk Management

The Portfolio will employ strict risk management procedures during the pre-investment due diligence, investment monitoring, and exit due diligence stages of investments. The purpose of these risk management exercises is to identify the full range of risks to the

investment, rank the risks according to potential impact on the investment and then rigorously test the proponent's projections and responses to questioning relating to the identified risks to ensure their logic and analyses are sound.

Due diligence prior to committing funds shall involve a rigorous review and confirmation of the financial, legal and operational aspects of the proposed investment. Qualified, experienced and independent advisors shall be engaged to perform the required reviews and verifications of proponent information and projections. The experience of a chosen advisor shall be appropriate for the type of production systems (e.g. timber, carbon sequestration) that contribute to revenue generation from the forest.

Investment monitoring programs shall be established for each Forestland Asset specifying the scope, frequency and degree of rigor for the periodic reviews. For investments dependent on emerging product markets, monitoring shall be more frequent and more rigorous than with traditional forestland investments.

Due diligence at the exit stage of the investment shall involve a rigorous review and confirmation of the financial aspects of the proposed sale.

VI. Valuation VALUATIONS

All calculations and computations shall be on a fair market value basis unless otherwise noted. Market value, as defined by the Uniform Standards of Professional Appraisal Practice (USPAP) of the Appraisal Foundation, shall be incorporated when reporting fair market value for accounting purposes. The standards of the forest ~~timber~~ industry in appraising forestland ~~timberland~~ shall be followed where there are differences between USPAP and forest ~~timber~~ industry practices.

VI. ASSET ALLOCATION

~~The following is the current asset allocation range for the Timber Portfolio, as a percent of the total allocated Real Estate Portfolio:~~

~~Range~~

~~Timber Portfolio: 10-20%~~

~~As a percent of the total allocated Specialized Portfolio, timber shall range from 20-45%.~~

~~From time to time, the actual allocation may fall out of the ranges prescribed by the Policy. In these instances, adjustments to correct the~~

~~actual in order for it to comply with the Policy allocation ranges shall be implemented on an opportunistic basis over a reasonable time frame (normally within a three-year period), and with ample consideration given to preserving the investment returns of the System.~~

VII. Glossary of Terms**GLOSSARY OF TERMS**

~~The Real Estate Glossary of Terms~~ Key words used in the policy are defined ~~is referenced in the System's~~ CalPERS' Master Glossary of Terms.

Timber Real Estate

Approved by the Policy Subcommittee: August 12, 1998

Adopted by the Investment Committee: September 14, 1998

Revised by the Policy Subcommittee: October 6, 2000

Approved by the Investment Committee: November 13, 2000

Revised by the Policy Subcommittee: December 14, 2001

Approved by the Investment Committee: December 17, 2001

Revised by the Policy Subcommittee: December 10, 2004

Approved by the Investment Committee: February 14, 2005

Name change to Forestland Program

Approved by the Policy Subcommittee: December 14, 2007

Appendix I**Distribution of States for Timber Geographic Allocation**

Northwest Region	South Region	Northeast Region	Midwest Region
<i>Alaska</i> <i>Arizona</i> <i>California</i> <i>Colorado</i> <i>Hawaii</i> <i>Idaho</i> <i>Montana</i> <i>Nevada</i> <i>New Mexico</i> <i>Oregon</i> <i>Utah</i> <i>Washington</i> <i>Wyoming</i>	<i>Alabama</i> <i>Arkansas</i> <i>Delaware</i> <i>Florida</i> <i>Georgia</i> <i>Kentucky</i> <i>Louisiana</i> <i>Mississippi</i> <i>Tennessee</i> <i>Missouri</i> <i>North Carolina</i> <i>Oklahoma</i> <i>South Carolina</i> <i>Texas</i> <i>Virginia</i> <i>West Virginia</i>	<i>Connecticut</i> <i>Maine</i> <i>Maryland</i> <i>Massachusetts</i> <i>New Hampshire</i> <i>New Jersey</i> <i>New York</i> <i>Pennsylvania</i> <i>Rhode Island</i> <i>Vermont</i>	<i>Illinois</i> <i>Indiana</i> <i>Iowa</i> <i>Kansas</i> <i>Michigan</i> <i>Minnesota</i> <i>Nebraska</i> <i>North Dakota</i> <i>Ohio</i> <i>South Dakota</i> <i>Wisconsin</i>

Asset Class Glossary: Inflation-Linked Asset Class
Policy: Inflation-Linked Asset Class
December 14, 2007

Custodian

A bank or other financial institution that provides custody of stock certificates and other assets of an institutional investor.

External Manager

An outside money management firm retained under contract by CalPERS.

General Pension Fund Consultant

An individual or organization that provides specialized professional assistance to the CalPERS Board of Administration in determining the pension fund's asset allocation model or optimal combination of investments in order to maximize risk-adjusted investment returns in a manner consistent with the State's long-term pension liabilities.

Risk

A measurable probability of losing or not gaining value. Risk is differentiated from uncertainty, which is not measurable. Risk in this context is also referred to as "standard deviation", which is a statistical measure of the degree to which an individual value in a probability distribution tends to vary from the mean of the distribution.

Cash Commodity

A physical commodity, not a commodity future, the prices of which can be different for a variety of reasons

Cash Market

~~The physical market for a deliverable instrument or commodity.~~

Collateral

Assets used as a support for financial risk, and can be used to fulfill financial obligations. In the context of futures, the collateral on deposit as margin in brokerage accounts is typically low risk financial assets such as cash, Treasury bills or bonds held by the futures brokerage firm as security against adverse market moves of futures positions.

Commodity

A commodity is a good that can be traded and delivered. The prices of commodities are determined on the basis of an active market. Typically commodities are of uniform quality and are produced by many different producers. Physical commodities, which can be stored, include energy (oil and its products, natural gas), metals (both industrial and precious), and agricultural products (grain, livestock, other "softs"). Non-physical commodities include electricity and emission credits

Commodities and Futures Trading Commission (CFTC)

An agency of the U.S. federal government that regulates the U.S. commodity futures and options markets. The CFTC is responsible for insuring market integrity and protecting market participants against manipulation, abusive trading practices, and fraud.

Counter Party

The entity which is in the opposing position to a transaction.

Derivative

An instrument whose value is based on the performance of an underlying financial asset, index, or other investment. Classes of derivatives include futures contracts, options, currency forward contracts, and swaps, ~~and options on futures.~~

FSA

The Financial Services Authority in the United Kingdom. This is the main independent financial regulatory agency in the UK, authorized by the government. The FSA regulates most financial services markets, exchanges and firms in the UK.

Futures

Exchange-traded contracts to buy or sell a standard quantity of a given instrument, at an agreed price, and date. A future differs from an option in that both parties are obliged to abide by the transaction. Futures are traded on a range of underlying instruments including commodities, bonds, currencies, and stock indices.

S&P GSCI -TRER

The S&P GSCI Total Return Index (S&P GSCI TR) (formerly the Goldman Sachs Commodity Index – Total Return) Excess Return Index is an index which measures the returns from maintaining a passive, long only exposure to a basket of 1st nearby commodity futures contracts. ~~The contracts included in the index are based on the rolling 5 year average world production weights (with strict liquidity constraints to make sure that the index remains investable).~~ There are currently 24 commodities that meet the requirements for inclusion. Since the 24 commodity futures contracts will come to expiry (often into physical delivery), the S&P GSCI TR deals with this by assuming that the index mechanically rolls out of the 1st nearby contracts into the next liquid nearby contracts at the official settlement prices on the 5th-9th business day of each month (essentially 20% per day). The S&P GSCI TR also includes the return on collateral, assumed to be cash in the amount equal to the value of the commodities, earning a daily Treasury bill rate.

ISDA

ISDA is an acronym for the International Swaps and Derivatives Association. ISDA represents participants in the privately negotiated derivatives industry, and is the largest global financial trade association. ISDA has pioneered efforts to identify and reduce the sources of risk in the derivatives and risk management business through the development of the ISDA Master Agreement

Leverage

A condition where a portfolio's market obligation may exceed the market-value-adjusted capital commitment by the amount of borrowed capital (debt).

Option

Contracts that give the purchaser the right, but not the obligation, to buy or sell an underlying instrument at a certain price (the exercise or strike price) on or before an agreed date (the exercise period). For this right, the purchaser pays a premium to the seller. The seller (writer) of an option has a duty to buy or sell at the strike price, should the purchaser exercise his right.

Over the Counter (OTC)

The market for securities and traded products that are not listed on the major exchanges. OTC options are options with negotiated premium, strike price, and expiration date.

Overlay

An investment process which is used to modify the risk profile of a portfolio using financial instruments. An overlay can either increase or decrease exposure to a set of financial risk factors.

Structured Note

An instrument representing a financial obligation created by modifying one or more standard financial obligations or instruments (i.e., a bond or mortgage) to create a risk/return profile or cash flow payment stream. This type of risk or return profile differs from the standard financial instrument from which it derives.

Swap

Private agreement between two companies to exchange cash flows in the future according to a prearranged formula.

Asset Class Glossary: Inflation Linked Asset Class
Policy: Inflation-Linked Bond Program
December 14, 2007

Benchmark

A set of securities with associated weights that provides a passive representation of a manager's investment process. The benchmark return is usually used to measure a manager's performance results.

Chief Investment Officer

Heads the CalPERS Investment Office and works with the Investment Committee to develop a long-term investment policy and asset allocation strategy for the Public Employees' Retirement Fund.

Derivative

An instrument whose value is based on the performance of an underlying financial asset, index, or other investment. Classes of derivatives include futures contracts, options, currency forward contracts, swaps, and options on futures.

Duration

A measure of price sensitivity to interest rate changes. Duration is the anticipated percentage move in price given a 100 basis point (1 percent) move in interest rates.

Fitch Ratings

A nationally-recognized credit rating agency that grades the investment quality of bonds in a 10-symbol system. The ranges extend from the highest investment quality, which is AAA, to the lowest credit rating, which is D. Securities rated BBB- or greater are considered investment-grade. Securities rated BB+ or below are considered to be speculative.

Foreign Debt Policy

CalPERS' guidelines for permissible country debt investments, as most recently amended.

Global Debt

Debt issued by a national government, subnational entity or corporation denominated in the U.S. dollar or other major currency and issued in major markets, typically New York or London, under the laws of those markets.

High Quality LIBOR

A limited-duration, highly liquid, LIBOR-based fund managed by CalPERS staff.

Investment Grade

A minimum credit rating of Baa3 by Moody's Investor Service or BBB- for Standard & Poor's Corporation, and BBB- by Fitch. Investment grade ratings

apply to issuers whose financial risk is relatively low and the probability of future payment relatively high.

Leverage

A condition where a portfolio's market obligation may exceed the market-value-adjusted capital commitment by the amount of borrowed capital (debt).

LIBOR

An acronym for London Interbank Offer Rate. These rates are based on rates quoted by 16 (for U.S. dollars) British Bankers' Association designated banks as being in their view, the offered rate at which deposits are being quoted to prime banks in the London Interbank Market at 11:00 a.m. London time. Of the 16 contributors, the four highest and four lowest rates are eliminated. An average of the remaining eight is taken.

Local Currency Debt

Debt issued by a national government, subnational entity or corporation denominated in local currency and issued in the local market, under local laws.

Moody's Investors Service

A nationally-recognized credit rating agency that grades the investment quality of bonds in a 9-symbol system. The ranges extend from the highest investment quality, which is Aaa, to the lowest credit rating, which is C. Securities rated Baa3 or greater are considered investment grade. Securities rated Ba1 or below are considered to be speculative.

Standard & Poor's

A nationally-recognized credit rating agency that grades the investment quality of bonds in a 10-symbol system. The ranges extend from the highest investment quality, which is AAA, to the lowest credit rating, which is D. Securities rated BBB- or greater are considered investment grade. Securities rated BB+ or below are considered speculative.

State Street Bank Short-Term Investment Fund (STIF)

An institutional money market mutual fund managed by State Street Global Advisors.

Asset Class Glossary: Inflation Linked Asset Class
Policy: Infrastructure Program
December 14, 2007

The Infrastructure Program glossary will be presented and approved at a later date.

Abiotic Risks

Risks to the health and well-being of forests that originate from non-biological sources such as wind, fire, snow and ice.

Biodiversity

The variation of taxonomic life forms within a given ecosystem.

Biotic Risks

Risks to the health and well-being of forests that originate from biological sources such as insects, mammals and fungi.

Bio-fuel

Fuels derived from biological sources such as ethanol produced from wood or corn.

Carbon Sequestration

The accumulation and storage of elemental carbon.

Emerging Product Markets

Markets for non-traditional products from forests such as sequestered carbon or feedstock for bio-fuels that are new and generally not well established (emerging).

Forest Certification

The independent evaluation of forest management practices against a national or international standard for best practices.

Forest License

Legal authority normally granted by government or its agent to manage forestlands and harvest and utilize forest resources for some specified period of time.

~~NCREIF Timber Index~~

~~National Council of Real Estate Investment Fiduciaries Timber Index (NCREIF) may be used as a benchmark for performance objectives.~~

~~Silvicultural~~

~~Care and cultivation of forest trees.~~

Silviculture

The theory and practice of controlling forest establishment, composition and growth.

Sustainability

Balancing the fulfillment of human needs with the protection of the natural environment so that these needs can be met not only in the present, but in the indefinite future.

Usufruct Rights

The legal right to use and derive profit or benefit from property that belongs to another person, as long as the property is not damaged.